

Vegetation Management Plan (VMP)

Town of Bolton, MA

2016-2020

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TABLE OF CONTENTS

Statement of Goals and Objectives	1
Target Vegetation	1
Vegetation Management Methods and Actions to Minimize Herbicide Use	2
Justification of Herbicide Use	4
Identification of Sensitive Areas	4
Operational Guidelines for Applicators Relative to Herbicide Use	7
Qualifications of Individuals Developing and Submitting a Plan	8
Alternative Land Use Options	8
Remedial Plan to Address Spills and Related Accidents	8
Monitoring Plan	9
Notification Procedures	9

Statement of Goals and Objectives

This Vegetation Management Plan (VMP) is intended to establish criteria for the Town of Bolton to control vegetation along municipal Rights of Way (ROW) in compliance with the ROW Management Regulations (333 CMR 11.00) as promulgated by the Massachusetts Department of Agricultural Resources.

The primary objective of this VMP is to provide the public with safe and unobstructed ROW's while utilizing an Integrated Pest Management (IPM) program and minimizing reliance upon pesticides. Vegetation maintenance is necessary along public ROW's to control unwanted vegetation that may pose a public nuisance, result in safety hazards or cause damage to structures and infrastructure. The goal of the program is to control undesirable vegetation while maximizing environmental protection and minimizing herbicide use. The plan's success will be based upon periodic monitoring and inspection which is expected to result in:

1. Control of target vegetation
2. Minimization of application areas
3. Reduction of chemical application rates
4. Reduction in frequency of chemical application.

In general, five to seven gallons of pesticide is used by the Town of Bolton each year. The main target for this use is poison ivy due to exposure issues when attempting to remove it manually. Roads that are being resurfaced are targeted as well as guardrails, catch basins, and drainage swales. Eradication is impossible but keeping poison ivy under control requires multiple treatments over multiple years. After die back, the removal of brush and other invasive plants (bittersweet, etc...) is managed using clippers, weed wackers, mowers and chippers. The streets are swept once per year and shoulders are dug back generally every three years.

Target Vegetation

Target vegetation will be limited to species that pose a safety hazard, compromise infrastructure, are a public nuisance, or are invasive and may have detrimental effects on natural resources.

Hazard Vegetation

Hazard vegetation poses a risk to public safety and represents vegetation that may: obscure sightlines, signs, or vehicular movement; create windfall hazards; or cause winter shading (which results in an increase in the use of deicing agents). Hazard vegetation may include trees, tree limbs and shrubs.

Nuisance Vegetation

This category includes vegetation that could cause problems to the general public, employees or contractors as well as cause damage to infrastructure. Target vegetation in this category is primarily Poison Ivy and other nuisance vegetation within 10 feet of the edge of pavement along with species that are destructive or compromise the function of infrastructure including: pavement/bridge joints, medians/traffic islands, and drainage structures/drainage ways.

Invasive Vegetation

Working in conjunction with the Conservation Commission, there may be opportunities to remove invasive material and encourage the growth of native species. Vegetation listed on the MA Department of Agricultural Resources *Massachusetts Prohibited Plant List* are included in this category. This list can be found at:
www.mass.gov/agr/farmproducts/proposed_prohibited_plant_list_v12-12-05.htm

Vegetation Management Methods and Actions to Minimize Herbicide Use

Vegetation management methods will include both non-chemical techniques and chemical application where necessary as well as an (IPM) Program to minimize herbicide use. Vegetation management may involve the following methods:

- Physical control – sustainable landscape methods, sealing cracks, repaving
- Mechanical methods – hand cutting, mowing, selective trimming
- Chemical control – foliar herbicide treatments and cut stump surface treatment.

The control methods selected will be chosen based on a variety of factors, with the goal to achieve a long-term, low maintenance vegetation management program.

Physical Control

Physical control methods will rely primarily on sustainable landscape methods and pavement maintenance.

Sustainable Landscapes

Sustainable landscape techniques include alternative methods for new development and reconstruction that minimize roadside maintenance and promote active planting of competing vegetation. These may include:

- Encouraging the use of seeding and planting specifications that require less maintenance
- Planting of native trees, shrubs, wildflowers and grasses to compete with and replace undesirable species
- Where applicable allowing private abutters to maintain ROW's
- Encouraging the use of Low Impact Development (LID) techniques

Pavement Maintenance

Pavement maintenance will consist of sealing cracks, general ROW repairs including repaving and installing new sidewalks and use of groundcovers where appropriate, such as under guardrails. The Town will also conduct routine street sweeping.

Mechanical Control

Mechanical control methods may include hand cutting, and mowing, and/or selective trimming.

Hand Cutting

Hand cutting consists of the mechanical cutting of target species using chain saws and brush saws. Target species are cut as close to the ground as practical. Hand cutting is used in order to protect environmentally sensitive sites. It is also used on target vegetation greater than twelve feet in height. Hand cutting is used on those restricted sites where terrain, site size or sensitivity renders mowing impossible or impractical. Hand cutting may be practiced at any time during the year.

Mowing

Mowing consists of the mechanical cutting of target vegetation using machines. Machines used for mowing can include push mowers, large rider mowers, rear deck mowers, brush mower, edgers and line trimmers. Selection of specific equipment is based on terrain, target vegetation size and equipment availability. Mowing will be used in areas where terrain and target stem size permit safe and efficient use of the above machinery. Mowing will be the principal method for vegetation control along road shoulders and where herbicide use is prohibited. Mowing will be conducted seasonally when weather conditions allow.

Selective Trimming

Selective trimming consists of the mechanical pruning of the tops of encroaching limbs of tall trees that may hamper roadway access. Trimming will be accomplished using aerial lifts via trucks or tractors, or if terrain or obstruction prevent equipment access, by climbing crews.

Chemical Control

Foliar Treatment

Foliar treatments involve the selective application of an herbicide diluted in water, to the foliage. Two types of equipment for foliar treatments used are the hand-held pump sprayers and motorized truck-mounted sprayer. Both types use low-pressure sprayers, below 60 pounds per square inch at the nozzle, for application. Foliar treatments with hand-held pump sprayers are used on low-density target vegetation. The herbicide solution will be diluted to the lowest possible percent per label directions depending on the plant species. Motorized application equipment may be used on higher density target vegetation.

Using the truck-mounted sprayer, the herbicide solution, diluted as above, is applied to lightly wet the target plant. Foliar treatments are used on target vegetation within the cleared width of streets when mechanical controls are unsafe or not possible.

Foliar applications will take place when plants are in full leaf and actively growing, and in accordance with the product label. Foliar treatments, when used according to the Town's application program, are an effective and efficient method to control the whole target plant. Controlling the whole target plant reduces competition from sprout growth.

Cut Stump Surface Treatment

Cut stump treatments consist of mechanical cutting of target species using chain saws immediately followed by herbicide treatment applied with a squirt bottle, a hand pump sprayer, or painted on the freshly cut surface of the stump. The cutting procedure is identical to that outlined in Hand Cutting. Cut stump application can be effective during the dormant period, however it may not be effective during times of sap flow (i.e., maples and birches during the months of February through early April).

Monitoring - All roadsides will be surveyed by the Town prior to any scheduled treatment program. Monitoring will be conducted by foot or by vehicle. Monitoring of areas may result from requests from the public. All monitoring records will be maintained by the Town and periodically reviewed as part of the comprehensive IPM program to further reduce herbicide use in the future.

Maintenance – All roads will be cleaned using a street sweeper. Cracking asphalt and sidewalks and other ROW defects will be repaired. The use of ground cover will be used where appropriate to assist in the prevention of undesirable vegetation growth.

Record Keeping - A log of areas surveyed will be kept by the Town for future planning and reference for at least 3 years. Areas maintained either through physical repair, mechanical or chemical control will be recorded by the Town.

Control Tactics – The decision to use one or a combination of vegetation control techniques will depend on the site-specific situation. The control tactics selected will control target vegetation in the most environmentally and efficient manner.

Table 1. Summary of Control Methods

Target	Conditions	Control Methods
Grasses	Where landscape, traffic and safety conditions allow.	Sustainable Landscapes Mechanical (mowing)
Low Growth Species	Where landscape, traffic and safety conditions allow. Species not poisonous	Sustainable Landscapes Mechanical (mowing)
Low Growth Species	Landscape prevents mowing Species not poisonous	Mechanical (hand cutting)
Grasses & Low Growth	Within cracks or joints	Chemical (foliar) ¹

Species	Safety eliminates use of mechanical methods	
Low Growth Species	Poison Ivy or other poisonous species within 10 feet of ROW or other municipal structure	Chemical (foliar) ¹
Tall Growth Species	Individual trees or branches	Mechanical (hand cutting or selective trimming)
Tall Growth Species	Plants >12 feet and landscape allows	Mechanical (hand cutting)
Tall Growth Species	Plants >12 feet and species are persistent and invasive	Chemical (cut stump surface treatment) ¹

¹Except in no spray areas.

Justification of Herbicide Use

Public Nuisance Vegetation

As previously noted, the control of poison ivy along the ROW is an objective of this vegetation management plan. Due to the low growing nature of poison ivy, and the fact that it grows along stolons, it is nearly impossible to control poison ivy through cultivation, hand pulling or mowing at the height generally used in roadside mowing operations. Moreover, the climbing characteristics of this plant over stone walls, tree trunks and guardrails make mechanical control out of the question for safety and economic reasons. In some locations, the judicious use of herbicides may develop herbaceous communities that out-compete poison ivy. Weeds growing in sidewalks or curbing, or between sidewalks and curbing, will also be a target of public nuisance vegetation control as part of this plan.

Other Species

Woody vegetation (low and high growth species) growing along the ROW that interfere with pedestrian or vehicle safety is controlled by a variety of techniques. Pruning or ground cutting using hand tools or chain saws primarily controls large woody vegetation. Depending upon the species of plant removed and its proximity to other vegetation, these stumps may be treated with an herbicide to prevent resprouting, although they often can be removed mechanically. Small woody plants that are growing along the road shoulder in an accessible location will be mowed along with the roadside grass. Woody plants that are growing over obstacles that would impede the mower, or have a viney growth habit and are not practical to hand cut or chip, or that grow very rapidly, can be controlled through the use of foliar application of herbicides. Primarily mowing will control grasses. However, nuisance grass that may grow in between guardrails or cracks in asphalt may best be controlled by spot treatment of herbicides, as stated above, if mechanical control is not feasible and the stem density and height warrant control.

Identification of Sensitive Areas

Sensitive areas are defined within 333 CMR 11.00 as areas within ROW's in which public health and environmental concerns warrant special protection to further minimize risks of unreasonable adverse effects (of herbicides). These include public groundwater supplies, public surface water supplies, private drinking water supplies, surface waters, wetlands, rivers, certified vernal pools, inhabited areas and agricultural areas. For the purposes of identification, sensitive areas can be separated into two categories: areas that are and areas that are not readily identifiable in the field.

Sensitive areas that are not readily identifiable in the field include public groundwater supplies, private water supplies and public surface water supplies. Sources available to identify these areas include:

- Massachusetts Department of Environmental Protection (MassDEP) Water Supply Maps (1:25,000); delineating the perimeter of public watersheds and the location of public wells
- MassDEP Wetlands Conservancy Maps (scale 1:1,000)
- Municipal maps and records including those from the Health Department to identify private water supplies

- Regional Planning Agency maps and records
- U.S. Fish and Wildlife Service National Wetlands Inventory Maps
- Conservancy Program & Ortho Photo Information – MassDEP (1:5,000)
- Massachusetts Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program.

Sensitive areas that are readily identifiable in the field include surface waters, wetlands, rivers and agricultural areas. The methods utilized to identify these sensitive areas will include:

- Consult Massachusetts Geographic Information System (MassGIS) spatial data maps to locate any of these sensitive areas that may already be identified on these maps.
- Prior to commencement of herbicide application operations, the treatment crew will be provided a marked topographic map.
- The treatment crew will visually survey the area to be treated for any additional sensitive areas as well as areas where the ground is bare or has limited re-growth from previous herbicide applications.
- Sensitive areas will be identified and marked in the field prior to application.

The following is a description of how the sensitive areas will be identified for required protection:

- Consult appropriate reference materials and sources to determine the precise locations of sensitive areas.
- Mark boundaries of each area on a U.S. Geological Survey (USGS) topographical maps, CAD (Computer Aided Drafting) drawings or GIS output.
- Prior to commencement of herbicide application operations, the treatment crew will be provided with above maps identifying sensitive areas.
- The designee for the Department of Public Works (or other qualified and approved individual) will deploy a point person in advance of the main herbicide application operation to locate and flag these boundaries or the boundaries of the appropriate limited/no spray areas.
- The Conservation Agent will assist in locating and marking sensitive areas.
- No spray areas will be identified with red or orange paint on the curb or in the roadway at the start and finish of a no spray area or with orange flags marked in the same manner, as appropriate.

Table 2. Sensitive Area Restrictions

Sensitive Area	No Spray Area	Limited Use Area	Where Identified
Wetlands and Water Over Wetlands	Within 10 feet (provisions of 333 CMR 11.04(4)(c) are followed)	10 – 100 feet; 12 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	Yearly Operational Plan (YOP) Maps and identify on site
Certified Vernal Pool	Within 10 feet	10 feet to the outer boundary of any Certified Vernal Pool Habitat;	YOP Maps and identify

		12 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	on site
Public Ground Water Supply	Within 400 feet (Zone I)	Zone II or IWPA (Interim Wellhead Protection Area which is the primary recharge area); 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps
Public Surface Water Supply	Within 100 feet of any Class A public surface water source	100 feet to the outer boundary of the Zone A; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps
	Within 10 feet of any tributary or associated surface water body located outside of the Zone A	10 feet to the outer boundary of the Zone A; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	
	Within 100 feet of any tributary or associated surface water body located within the Zone A of a Class A public surface water source		
	Within a lateral distance of 100 feet for 400 feet upstream of any Class B Drinking Water Intake	Within a lateral distance of between 100 - 200 feet for 400 feet upstream of intake; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	
Private Water Supply	Within 50 feet	50 – 100 feet; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP will list and identify on site
Riverfront Area	Within 10 feet from mean annual high-water line	10 feet from the mean annual high water line and the outer boundary of the Riverfront Area; 12 months must elapse between applications;	YOP Maps and identify on site

		Selective low pressure, using foliar techniques or basal or cut-stump applications	
Agricultural and Inhabited Areas	N/A	0 – 100 feet 12 months must elapse between application; Selective low pressure, using foliar techniques or basal or cut-stump applications.	Identify on site
State-listed Species Habitat ¹	No application within habitat area except in accordance with a Yearly Operational Plan approved in writing by the Division of Fisheries and Wildlife		YOP Maps

¹Includes Estimated Habitats of Rare Wildlife and the Priority Habitats for State-listed Species as shown on the most recent edition of the Massachusetts Natural Heritage Atlas prepared by the Natural Heritage and Endangered Species Program (NHESP) within the Massachusetts Division of Fisheries and Wildlife.

Operational Guidelines for Applicators Relative to Herbicide Use

As required by regulations, application to roadside ROW requires a valid Category 40 pesticide certification from the Department of Agricultural Resources. The applicator(s) will be a Town employee and/or certified contractor working under the supervision of the Director of Public Works. In addition to the applicable rules and regulations, applicators will adhere to the following operational guidelines.

Weather

Herbicide application will be restricted during certain adverse weather conditions, such as rain or wind. Herbicide applications will not be conducted during periods of moderate or heavy rainfall. Foliar applications can be effective in light mist situations. However any measurable rainfall that creates leaf runoff will wash the herbicide off target vegetation. If foliar applications are interrupted by unexpected rainfall, the treatment will not resume until the rain ends and active leaf runoff has ceased. Cut stump treatments will not be conducted during measurable precipitation events. Cut stump treatments will cease during measurable precipitation and will not resume until precipitation has ceased.

To minimize off-target drift, the applicator will comply with the following restrictions:

- During periods of wind, which are strong enough to bend the tops of the main stems of trees on the roadside, the applicator will periodically observe the application of the foliar treatment to insure that there is no significant movement of the herbicide. If the applicator can see the herbicide moving off target, the application will immediately stop until the wind has subsided enough to permit further applications.
- Herbicide solution to be used for a foliage application may contain low drift agents. Low drift agents may be added to the foliage herbicide solutions as per the low drift agent label. In moderate wind conditions, as per label recommendations, more low drift agent may be added, at the discretion of the applicator to control increased drift.
- Foliar treatment will not be made to target vegetation that exceeds twelve feet in height.

Equipment Calibration

Foliar application equipment will be calibrated prior to application and in accordance with manufacturer's recommendations. Equipment will be calibrated to maintain pressures not exceeding sixty PSI at the nozzle. Applicator nozzles will be adjusted to apply a coarse spray pattern.

Cut stump treatment squirt bottle applicators or hand pump sprayers will be adjusted to deliver the herbicide solution in a thin stream to the target zone.

Sensitive Area Restrictions

In defined sensitive areas, there exists a no-spray area where herbicide use is prohibited and limited spray area where herbicide use is allowed under certain conditions. In places around sensitive areas where herbicide use is allowed, only the minimum labeled rate of application for the control of target species can be applied. Only herbicides listed on the current ROW Sensitive Area Materials List will be used.

Qualifications of Individuals Developing and Submitting a Plan

Mr. Nathaniel Berry is the Grounds Crew Leader for the Town of Bolton. He holds a Category 40 Pesticide License and is present at all pesticide applications conducted by the Town. Mr. Harold Brown has been the Director of Public Works for the Town of Bolton from 1992 to the present. Mr. Brown manages Bolton's vegetation management program including oversight of the VMP and YOP.

Alternative Land Use Options

Every effort will be given for alternative land use options. However, there are specific criteria to be met for adoption of alternative land use options. The alternative land use option must control the nuisance vegetation in a similar manner, environmentally and efficaciously as allowed in this VMP. For example, a common practice of abutters to roadways is to mow and maintain road shoulders. In this instance, the monitoring program would reveal that the area does not warrant vegetation control. A written agreement would clearly specify that the Town will not treat vegetation in these areas and outline the landowner's responsibilities for vegetation control.

Remedial Plan to Address Spills and Related Accidents

All mixing and loading of herbicides will be conducted at the central facility where the herbicides are stored. Only the minimum amount of herbicide needed will be mixed to reduce and/or avoid waste. The vehicles carrying out the spray operations will be equipped with a bag of absorbent, activated charcoal, leak-proof containers, a broom and a shovel in case of minor spills. A clipboard log of the herbicides on the vehicle will be kept on the vehicle. Herbicide labels and fact sheets will be carried on-site by the applicator.

As soon as any spill is observed, immediate action will be taken to contain the spill and protect the spill area. The cause of the spill must be identified and secured. Spill containment will be accomplished by covering the spill with absorptive clay or other absorptive material or, for large spills, building clay or soil dikes to impede spill progress. Until completely remediated, the spill area will be protected by placing barriers, flagging, or placing crew members at strategic areas as appropriate. If a fire is involved, care will be taken to avoid breathing fumes from any burning chemicals.

Minor spills will be remedied by soaking up the spill with absorption clay or other absorptive material and placing it in leak proof containers, removed from the site and disposed of properly. Dry herbicides, such as granulars, will be swept up or shoveled up directly in leak proof containers for proper disposal. All contaminated soil will be placed in leak proof containers, removed from the site and disposed of properly. Activated charcoal will be incorporated into the soil at the spill location per label instructions. Any spill will be reported to the Pesticide Division.

Major spills will be handled in a similar manner as minor spills, except in cases where the spill cannot be contained and/or removed by the crew. In this case the MassDEP Incident Response Unit and the Pesticide Bureau must be contacted.

MassDEP will be contacted when there is a spill of a reportable quantity, regardless of major or minor spill status and in accordance with 310 CMR 40.0000 Massachusetts Contingency Plan.

In the event of a spill, information on safety precautions and clean up procedures may be gathered from the following sources:

- Herbicide label
- Herbicide Material Safety Data Sheet
- Herbicide Manufacturer
 - DOW (517) 636-4400
 - Dupont (800) 441-3637
 - Monsanto (314) 697-400
- Massachusetts Pesticide Bureau (617) 626-1781
- Massachusetts Department of Environmental Protection (888) 304-1133
- Chem Trec (800) 424-9300
- Department of Public Health – Environmental Toxicology Program (617) 624-5757
- Massachusetts Poison Control Center (800) 682-9211
- Bolton Fire Department (978) 779-2276 – non-emergency
- Bolton Police Department (978) 779-2276 – non-emergency
- Bolton Health Department (978) 779-2297

Monitoring Plan

On an annual basis, the Town will evaluate the success of the vegetation management program. The goal of this monitoring plan is to evaluate the relative success of vegetation control efforts. Following treatment, at an appropriate period of time, treatment areas will be revisited. The survivorship or regrowth of nuisance vegetation will be recorded and evaluated periodically to determine whether the program is meeting its goals. Any changes will be reflected in the next year's YOP as applicable.

Notification Procedures

Once approved, a copy of the VMP will be provided to the Town Administrator, Board of Health and Conservation Commission. Upon approval of the VMP and YOP and 21-days in advance of the application of herbicide to a ROW, the Town will notify the Department, Board of Health, water supplier, Town Administrator and Conservation Commission of the application. Notification will include: method and location of application, herbicide fact sheet, EPA registration number for herbicide and applicator contact information. Additionally, at least 48-hours prior to a ROW herbicide application, the applicant will publish in a local newspaper the following information: methods and location of pesticide application, approximate dates of herbicide application, name of herbicide(s) to be used, description/purpose of application and contact information for designated individual representing the Town whom citizens can contact.